

# How is the North East of Scotland becoming a hub for offshore wind?

**Words:** Morag McCorkindale, Aberdeen Renewable Energy Group (AREG)



Morag McCorkindale

There are currently five consented offshore wind developments planned for off the North East coast of Scotland, so the region is trailblazing in terms of investment and tangible projects getting off the ground. Part of AREG's strategy is to identify and drive forward projects that will bring economic development value to the region. We want Aberdeen to be as famous for renewables as it is for oil and gas.

There needs to be a sustainable energy sector, which supports jobs for future generations and it is important we retain critical energy skills as well as promoting our capabilities across the country and globally. One of the key attractions of the North East of Scotland is our well-developed supply chain with globally

recognised expertise in engineering solutions designed for harsh water conditions.

**What scale of wind farm is being planned?**

The wind farms are all very different in terms of concept and construction.



Photo credit: Statoil

At one end of the scale we have three innovation led projects, and at the other, two industrial scale power stations.

The European Offshore Wind Deployment Centre (EOWDC), Scotland's largest offshore wind test and demonstration facility is being developed by Vattenfall. Located in Aberdeen Bay, the 92.4 MW 11 turbine offshore wind scheme will trial next generation technology.

AREG devised the project, found industrial partners and helped secure a grant of up to 40 million euro from the EU for the project. We were previously a shareholder and development partner and we continue to have a facilitation role. Construction began last year with first power expected to be generated next summer.

The £2.6 billion Beatrice Offshore Wind Farm will be situated in the Outer Moray Firth and is expected to power

approximately 450,000 homes. The 588MW, 84 turbine farm being developed by Subsea 7, Nexans and Siemens is currently under construction and is expected to be fully operational in 2019. The Moray Offshore Renewables development in the outer Moray Firth is expected to generate 1.5GW of capacity across three sites.

#### **What is innovative about the design of new developments?**

Statoil's Hywind development, 25km off Peterhead, is a world first floating array with 5 6MW turbines planned and production expected to begin in Q4 this year. It's a great example of the transfer of technology from oil and gas into offshore wind as it uses a spar buoy sub structure long deployed in oil and gas.

This enables development in much deeper waters than previously feasible with

offshore wind. The pilot will be able to power around 20,000 homes, but the exciting element is proving the concept and then scaling up to a potential deepwater floating offshore wind park of 500 – 1000 MW.

Kincardine Offshore Windfarm project, 15km south east of Aberdeen is another example of the transfer of technology as it will use a semi-submersible sub-structure. It will also be one of the world's first array of floating wind turbines, helping to establish a leading position for Scotland in the deployment of this novel technology.

The project is considered a commercial demonstrator site. The purpose of these sites is to get the industry to the point where it is competitive with other energy generation sources. With the advances being made, offshore wind could be the cheapest form of electricity generation within 10 years.



### **What impact will the offshore wind farms make?**

The wind farms will collectively generate substantial green electricity to power thousands of homes which will contribute to government and international targets. The economic impact is also significant. The five offshore wind farms constitute around £5.5 billion worth of capital investment which will support the supply chain and create and preserve jobs.

The North East is becoming a global hot spot for offshore wind and the eyes of the world are on these ground-breaking developments to see what can be delivered. There are many nations desperate for new sources of power for homes, hospitals, industries and to improve living standards and what is learned from the North Sea developments can help make that happen. Our region will be at the forefront of helping other countries access the power that they need.

### **Are people and companies transitioning from oil and gas into renewables?**

Some people are moving from oil and gas into emerging renewable businesses; however the biggest transition is companies deploying their assets and people into renewables projects as required.

In the last 18 months we have witnessed a dramatic evolution of people moving seamlessly between the sectors and given the scale of developments and depths of water there is more of a need for the engineering skills and experience that only the oil and gas industry can offer.

There are high profile opportunities around turbines, foundations and blades, however there is a whole enabling industry required as well. We are seeing more widespread transfer of skills and people – in areas such as project development and management, logistics and crew transfer, ground condition surveys, site clearance, environmental monitoring and assessment as well as professional services, to name just a few.

### **How does AREG support new developments?**

AREG plays a key role in developing a sustainable renewable energy sector in Scotland and the UK through supporting our members and attracting inward investment.

We work closely with the supply chain giving access to market intelligence, briefings on legislation, policy and finance so they can quickly get to grips with opportunities and new developments.

AREG represents members across the UK and also works with individual technology device and project developers to make sure they understand the environment in the North East of Scotland and can operate effectively here. We also share knowledge around best practice which helps AREG members develop their propositions.

### **What is next for offshore wind developments?**

Cost reduction will be critical to maintaining offshore wind's growth. The floating concept developments are truly exciting for the sector and the next challenge is to deploy those technologies successfully at scale.

The innovative projects such as the EOWDC will help greatly with the development of future projects in UK waters as new technologies will be tested, cost reduction achieved and there will also be investment in scientific research with some shared findings.

All eyes are on this generation of offshore wind developments as they could lead to real industrial scale, new technology and true global opportunities on a massive scale.

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